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SEQUENCE LISTING

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<110> TOOLGEN, INC., et al.

<120> Transducible DNA-Binding Proteins

<130> PCA40631-TG1

<150> US 60/477,459

<151> 2003-06-10

<160> 72

<170> PatentIn version 3.2

<210> 1

<211> 11

<212> PRT

<213> HIV

<400> 1

Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg

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* <210> 2

<211> 16

<212> PRT

<213> Drosophila melanogaster

<400> 2

Ala Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys Glu Asn

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<210> 3
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<213> HSV

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Asp Ala Ala Thr Ala Thr Arg Gly Arg Ser Ala Ala Ser Arg Pro Thr
1 5 10 15

Glu Arg Pro Arg Ala Pro Ala Arg Ser Ala Ser Arg Pro Arg Arg Pro
20 25 30

Val Glu

<210> 4
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<212> PRT
<213> synthetic

<400> 4

Thr Ser Pro Leu Asn Ile His Asn Gly Gln Lys Leu
1 5 10

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<213> Artificial Sequence

<220>
<223> coordinating residue

<220>

<221> VARIANT

<222> 11

<223> Xaa = Phe or Tyr

<220>

<221> VARIANT

<222> 17

<223> Xaa = hydrophobic residue

<220>

<221> VARIANT

<222> 2-6, 8-10, 12-16, 18-19, 21-25

<223> Xaa = any amino acid

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Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa His

20 25

<210> 6

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<213> Artificial Sequence

<220>

<223> purified polypeptide

<220>

<221> VARIANT

<222> 11

<223> Xaa = Phe or Tyr

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<221> VARIANT

<222> 17

<223> Xaa = hydrophobic residue

<220>

<221> VARIANT

<222> 2-6, 8-10, 12, 14, 18, 21-25

<223> Xaa = any amino acid

<400> 6

Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Arg Xaa Asp Glu
1 5 10 15

Xaa Xaa Arg His Xaa Xaa Xaa Xaa His
20 25

<210> 7

<211> 260

<212> PRT

<213> human

<400> 7

Tyr Leu Pro Asp Thr Asp Asp Arg His Arg Ile Glu Glu Lys Arg Lys
1 5 10 15

Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met Lys Lys Ser Pro Phe Ser
20 25 30

Gly Pro Thr Asp Pro Arg Pro Pro Arg Arg Ile Ala Val Pro Ser
35 40 45

Arg Ser Ser Ala Ser Val Pro Lys Pro Ala Pro Gln Pro Tyr Pro Phe
50 55 60

Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp Glu Phe Pro Thr Met Val
65 70 75 80

Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser Ala Leu Ala Pro Ala Pro
85 90 95

Pro Gln Val Leu Pro Gln Ala Pro Ala Pro Ala Pro Ala Met
100 105 110

Val Ser Ala Leu Ala Gln Ala Pro Ala Pro Val Pro Val Leu Ala Pro
115 120 125

Gly Pro Pro Gln Ala Val Ala Pro Pro Ala Pro Lys Pro Thr Gln Ala
130 135 140

Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gln Leu Gln Phe Asp Asp
145 150 155 160

Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr Asp Pro Ala Val Phe
165 170 175

Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe Gln Gln Leu Leu Asn
180 185 190

Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu Pro Met Leu Met Glu
195 200 205

Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Ala Gln Arg Pro Pro Asp
210 215 220

Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly Leu Pro Asn Gly Leu Leu
225 230 235 240

Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala Asp Met Asp Phe Ser Ala
245 250 255

Leu Leu Ser Gln
260

<210> 8
<211> 127
<212> PRT
<213> *Saccharomyces cerevisiae*

<400> 8

Asn Phe Asn Gln Ser Gly Asn Ile Ala Asp Ser Ser Leu Ser Phe Thr

1 5 10 15

Phe Thr Asn Ser Ser Asn Gly Pro Asn Leu Ile Thr Thr Gln Thr Asn

20 25 30

Ser Gln Ala Leu Ser Gln Pro Ile Ala Ser Ser Asn Val His Asp Asn

35 40 45

Phe Met Asn Asn Glu Ile Thr Ala Ser Lys Ile Asp Asp Gly Asn Asn

50 55 60

Ser Lys Pro Leu Ser Pro Gly Trp Thr Asp Gln Thr Ala Tyr Asn Ala

65 70 75 80

Phe Gly Ile Thr Thr Gly Met Phe Asn Thr Thr Thr Met Asp Asp Val

85 90 95

Tyr Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro Lys Lys

100 105 110

Glu Ile Ser Met Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser

115 120 125

<210> 9
<211> 90
<212> PRT
<213> *Saccharomyces cerevisiae*

<400> 9

Asn Ser Ala Ser Ser Ser Thr Lys Leu Asp Asp Asp Leu Gly Thr Ala
1 5 10 15

Ala Ala Val Leu Ser Asn Met Arg Ser Ser Pro Tyr Arg Thr His Asp
20 25 30

Lys Pro Ile Ser Asn Val Asn Asp Met Asn Asn Thr Asn Ala Leu Gly
35 40 45

Val Pro Ala Ser Arg Pro His Ser Ser Ser Phe Pro Ser Lys Gly Val
50 55 60

Leu Arg Pro Ile Leu Leu Arg Ile His Asn Ser Glu Gln Gln Pro Ile
65 70 75 80

Phe Glu Ser Asn Asn Ser Thr Ala Cys Ile
85 90

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<211> 63

<212> PRT

<213> HOMO SAPIENS

<400> 10

Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg Asp Glu
1 5 10 15

Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu Val Met
20 25 30

Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu Phe Thr
35 40 45

Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro Trp
50 55 60

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<213> HOMO SAPIENS

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Asp Ala Lys Ser Leu Thr Ala Trp Ser Arg Thr Leu Val Thr Phe Lys
1 5 10 15

Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr
20 25 30

Ala Gln Gln Ile Val Tyr Arg Asn Val Met Leu Glu Asn Tyr Lys Asn
35 40 45

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
50 55 60

Leu Glu Lys Gly Glu Glu Pro Trp Leu Val Glu Arg Glu Ile His Gln
65 70 75 80

Glu Thr His Pro Asp Ser Glu Thr Ala Phe Glu Ile Lys Ser Ser Val
85 90 95

<210> 12

<211> 23

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<213> HOMO SAPIENS

<400> 12

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu

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Arg Arg His Gly Arg Thr His

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<210> 13

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 13

Tyr Gln Cys Asn Ile Cys Gly Lys Cys Phe Ser Cys Asn Ser Asn Leu

1

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10

15

His Arg His Gln Arg Thr His

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<210> 14

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 14

Tyr Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys

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Arg Arg His Cys Ile Leu His

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<210> 15

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 15

Tyr Thr Cys Ser Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu
1 5 10 15

Asn Arg His Arg Arg Thr His
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<210> 16

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 16

Tyr Lys Cys Lys Glu Cys Gly Lys Ala Phe Asn His Ser Ser Asn Phe
1 5 10 15

Asn Lys His His Arg Ile His
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<210> 17

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 17

Phe Lys Cys Pro Val Cys Gly Lys Ala Phe Arg His Ser Ser Ser Leu
1 5 10 15

Val Arg His Gln Arg Thr His
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<210> 18

<211> 24

<212> PRT

<213> HOMO SAPIENS

<400> 18

Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Ile Ser Ser Asn Leu
1 5 10 15

Gln Arg His Val Arg Asn Ile His

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<210> 19

<211> 23

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<213> HOMO SAPIENS

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Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Ile Gly Ser Asn Leu
1 5 10 15

Asn Val His Arg Arg Ile His

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<213> HOMO SAPIENS

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Tyr Gly Cys His Leu Cys Gly Lys Ala Phe Ser Lys Ser Ser Asn Leu
1 5 10 15

Arg Arg His Glu Met Ile His

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<210> 21

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<212> PRT

<213> HOMO SAPIENS

<400> 21

Tyr Lys Cys Lys Glu Cys Gly Gln Ala Phe Arg Gln Arg Ala His Leu

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Ile Arg His His Lys Leu His

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<400> 22

Tyr Lys Cys His Gln Cys Gly Lys Ala Phe Ile Gln Ser Phe Asn Leu

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Arg Arg His Glu Arg Thr His

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<210> 23

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<212> PRT

<213> HOMO SAPIENS

<400> 23

Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu
1 5 10 15

Leu Arg His Ile Lys Leu His
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<213> HOMO SAPIENS

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Tyr Ala Cys His Leu Cys Gly Lys Ala Phe Thr Gln Ser Ser His Leu
1 5 10 15
Arg Arg His Glu Lys Thr His
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<213> HOMO SAPIENS

<400> 25

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu
1 5 10 15

Thr Arg His Gln Lys Ile His
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<210> 26
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<213> HOMO SAPIENS

<400> 26

Tyr Ala Cys His Leu Cys Gly Lys Ala Phe Thr Gln Cys Ser His Leu

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Arg Arg His Glu Lys Thr His

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<210> 27

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<213> HOMO SAPIENS

<400> 27

Tyr Ala Cys His Leu Cys Ala Lys Ala Phe Ile Gln Cys Ser His Leu

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Arg Arg His Glu Lys Thr His

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<400> 28

Tyr Val Cys Arg Glu Cys Gly Arg Gly Phe Arg Gln His Ser His Leu

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Val Arg His Lys Arg Thr His

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<210> 29
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<400> 29

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu
1 5 10 15

Thr Thr His Lys Ile Ile His
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<210> 30
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<213> HOMO SAPIENS

<400> 30

Tyr Glu Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu
1 5 10 15

Asn Val His Lys Arg Thr His
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<210> 31
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<213> HOMO SAPIENS
<400> 31

Tyr Met Cys Ser Glu Cys Gly Arg Gly Phe Ser Gln Lys Ser Asn Leu
1 5 10 15

Ile Ile His Gln Arg Thr His

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<210> 32

<211> 23

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<213> HOMO SAPIENS

<400> 32

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu

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Thr Lys His Lys Lys Ile His

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Ile Arg His Gln Arg Thr His

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<212> PRT

<213> HOMO SAPIENS

<400> 34

Tyr Val Cys Arg Glu Cys Arg Arg Gly Phe Ser Gln Lys Ser Asn Leu
1 5 10 15
Ile Arg His Gln Arg Thr His
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<210> 35

<211> 23

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<213> HOMO SAPIENS

<400> 35

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu
1 5 10 15
Thr Arg His Lys Lys Ser His
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<210> 36

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 36

Tyr Glu Cys Asn Thr Cys Arg Lys Thr Phe Ser Gln Lys Ser Asn Leu
1 5 10 15
Ile Val His Gln Arg Thr His
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<210> 37

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 37

Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu

1

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Thr Val His Gln Lys Ile His

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<210> 36

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 38

Tyr Lys Cys Asp Glu Cys Gly Lys Asn Phe Thr Gln Ser Ser Asn Leu

1

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Ile Val His Lys Arg Ile His

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Tyr Glu Cys Asp Val Cys Gly Lys Thr Phe Thr Gln Lys Ser Asn Leu

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Gly Val His Gln Arg Thr His

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Tyr Glu Cys Val Gln Cys Gly Lys Gly Phe Thr Gln Ser Ser Asn Leu

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Ile Thr His Gln Arg Val His

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<213> HOMO SAPIENS

<400> 41

Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu

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Ile Arg His Gln Arg Thr His

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<212> PRT

<213> HOMO SAPIENS

<400> 42

Tyr Glu Cys Gln Asp Cys Gly Arg Ala Phe Asn Gln Asn Ser Ser Leu
1 5 10 15

Gly Arg His Lys Arg Thr His
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<210> 43
<211> 23
<212> PRT
<213> HOMO SAPIENS

<400> 43

Tyr Glu Cys Asn Glu Cys Gly Lys Phe Phe Ser Gln Ser Ser Ser Leu
1 5 10 15

Ile Arg His Arg Arg Ser His
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<210> 44
<211> 23
<212> PRT
<213> HOMO SAPIENS

<400> 44

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Asn Gln Ser Ser Thr Leu
1 5 10 15
Thr Arg His Lys Ile Val His
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<210> 45
<211> 23
<212> PRT

<213> HOMO SAPIENS

<400> 45

Tyr Glu Cys Asn Glu Cys Gly Lys Ala Phe Ala Gln Asn Ser Thr Leu
1 5 10 15

Arg Val His Gln Arg Ile His
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<210> 46

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 46

Tyr Glu Cys His Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr His Leu
1 5 10 15

Thr Gln His Arg Arg Ile His
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<210> 47

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 47

Tyr Glu Cys His Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr His Leu
1 5 10 15

Thr Arg His Arg Arg Ile His
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<210> 48

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 48

His Lys Cys Leu Glu Cys Gly Lys Cys Phe Ser Gln Asn Thr His Leu

1

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Thr Arg His Gln Arg Thr His

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<210> 49

<211> 25

<212> PRT

<213> HOMO SAPIENS

<400> 49

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp

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Glu Leu Asn Arg His Lys Lys Arg His

20

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<210> 50

<211> 25

<212> PRT

<213> HOMO SAPIENS

<400> 50

Tyr His Cys Asp Trp Asp Gly Cys Gly Trp Lys Phe Ala Arg Ser Asp

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Glu Leu Thr Arg His Tyr Arg Lys His

20 25

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<212> PRT

<213> HOMO SAPIENS

<400> 51

Tyr Arg Cys Ser Trp Glu Gly Cys Glu Trp Arg Phe Ala Arg Ser Asp

1 5 10 15

Glu Leu Thr Arg His Phe Arg Lys His

20 25

<210> 52

<211> 25

<212> PRT

<213> HOMO SAPIENS

<400> 52

Phe Ser Cys Ser Trp Lys Gly Cys Glu Arg Arg Phe Ala Arg Ser Asp

1 5 10 15

Glu Leu Ser Arg His Arg Arg Thr His

20 25

<210> 53

<211> 25

<212> PRT

<213> HOMO SAPIENS

<400> 53

Phe Ala Cys Ser Trp Gln Asp Cys Asn Lys Lys Phe Ala Arg Ser Asp
1 5 10 15

Glu Leu Ala Arg His Tyr Arg Thr His
20 25

<210> 54

<211> 25

<212> PRT

<213> HOMO SAPIENS

<400> 54

Tyr His Cys Asn Trp Asp Gly Cys Gly Trp Lys Phe Ala Arg Ser Asp
1 5 10 15

Glu Leu Thr Arg His Tyr Arg Lys His
20 25

<210> 55

<211> 24

<212> PRT

<213> HOMO SAPIENS

<400> 55

Phe Leu Cys Gln Tyr Cys Ala Gln Arg Phe Gly Arg Lys Asp His Leu
1 5 10 15

Thr Arg His Met Lys Lys Ser His
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<210> 56

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 56

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu
1 5 10 15

Lys Thr His Thr Arg Thr His
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<210> 57

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 57

Phe Ala Cys Glu Val Cys Gly Val Arg Phe Thr Arg Asn Asp Lys Leu
1 5 10 15

Lys Ile His Met Arg Lys His
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<210> 58

<211> 25

<212> PRT

<213> HOMO SAPIENS

<400> 58

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp
1 5 10 15

Lys Leu Asn Arg His Lys Lys Arg His
20 25

<210> 59
<211> 23
<212> PRT
<213> HOMO SAPIENS

<400> 59

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu
1 5 10 15

Thr Arg His Gln Arg Ile His
20

<210> 60
<211> 23
<212> PRT
<213> HOMO SAPIENS

<400> 60

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu
1 5 10 15

Ile Arg His Gln Arg Thr His
20

<210> 61
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<212> PRT
<213> HOMO SAPIENS
<400> 61

Tyr Leu Cys Ser Glu Cys Asp Lys Cys Phe Ser Arg Ser Thr Asn Leu
1 5 10 15

Ile Arg His Arg Arg Thr His

20

<210> 62

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 62

Tyr Glu Cys Lys Glu Cys Gly Lys Ala Phe Ser Ser Gly Ser Asn Phe

1

5

10

15

Thr Arg His Gin Arg Ile His

20

<210> 63

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 63

Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val Ser Ser Asn Leu

1

5

10

15

Asn Val His Arg Arg Ile His

20

<210> 64

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 64

Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu
1 5 10 15
Arg Arg His Glu Thr Thr His
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<210> 65

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 65

Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu
1 5 10 15
Ile Arg His Gln Arg Ile His
20

<210> 66

<211> 23

<212> PRT

<213> HOMO SAPIENS

<400> 66

Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu
1 5 10 15
Thr Arg His Lys Arg Ile His
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<210> 67

<211> 83

<212> PRT

<213> SYNTHETIC

<400> 67

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu
1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg
50 55 60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr
65 70 75 80

Gly Glu Lys

<210> 68

<211> 83

<212> PRT

<213> SYNTHETIC

<400> 68

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
65 70 75 80

Gly Glu Lys

<210> 69

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<213> Synthetic

<400> 69

Tyr Ala Arg Lys Ala Arg Arg Gln Ala Arg Arg
1 5 10

<210> 70

<211> 11

<212> PRT

<213> Synthetic

<400> 70

Tyr Ala Arg Ala Ala Arg Arg Ala Ala Arg Arg
1 5 10

<210> 71

<211> 11

<212> PRT

<213> Synthetic

<400> 71

Tyr Ala Arg Ala Ala Arg Arg Ala Ala Arg Ala

1

5

10

<210> 72

<211> 11

<212> PRT

<213> Synthetic

<400> 72

Tyr Ala Arg Ala Ala Ala Arg Gln Ala Arg Ala

1

5

10